CLAIMS

What is claimed is:

1. A method for using an RF tag, comprising the steps of;
transmitting a first data set to a tag at a first frequency, and
transmitting second data set to the tag at a second frequency.

2. The method of claim 1, wherein;
the first data set comprises;
a command for writing data, and
data for storing in the tag.

3. The method of claim 1, wherein;
the second data set comprises;
a command for reading data from the tag.

4. The method of claim 3, further comprising the step of;
reading data from the tag at the second frequency.

5. The method of claim 1, wherein;
the first instance of transmitting data and the second instance of transmitting data occur a separate locations.

6. An RF tag programmer, comprising;

a digital controller,

a radio frequency source controlled by the digital controller,

a modulator controlled by the digital controller for modulating radio frequency energy generated by the radio frequency source, and

an antenna coupled to the output of the modulator for transmitting modulated radio frequency energy to an RF tag, whereby;

the RF tag programmer may transmit modulated radio frequency energy at a plurality of radio frequencies.

7. The RF tag programmer of claim 6, wherein;

the RF source is tunable to a plurality of radio frequencies.

8. The RF tag programmer of claim 6, wherein;

the RF source comprises a plurality of RF sources.

9. The RF tag programmer of claim 8, further comprising;

a plurality of modulators coupled to the plurality of RF sources.

10. The RF tag programmer of claim 9, wherein;

at least one of a set comprising a coupled RF source and modulator is installable as a module.

11. The RF tag programmer of claim 6, further comprising;

a printer for producing printed indicia on the RF tag.

12. An RF tag, comprising;

a first digital controller,

a first radio frequency communication module coupled to the digital controller, and

a first antenna coupled to the radio frequency communication module,

whereby the RF tag may receive data at a plurality of radio frequencies.

13. The RF tag of claim 12, wherein;

the digital controller and the radio frequency communication module are formed on a common silicon die.

14. The RF tag of claim 12, wherein;

the RF tag is a passive RF tag.

15. The RF tag of claim 12, further comprising;

a label substrate for receiving printing,

the substrate also providing a surface for mounting the digital controller, the radio frequency communication module, and the antenna.

16. The RF tag of claim 12, further comprising;

a second radio frequency communication module coupled to the first digital controller, and

a second antenna coupled to the second radio frequency communication module.

17. The RF tag of claim 12, further comprising;

a second digital controller,

a second radio frequency communication module coupled to the second digital controller, and

a second antenna coupled to the second radio frequency communication module.

18. The RF tag of claim 12, wherein;

the antenna comprises;

a first section responsive to magnetic coupling, and

a second section responsive to carrier wave coupling.

19. The RF tag of claim 12, wherein;

the antenna comprises;

a first section responsive to near field coupling, and

a second section responsive to far field coupling.

20. The RF tag of claim 12, wherein;

the antenna comprises;

a data transmission element, and

a programming stub.

21. The RF tag of claim 12, wherein;

the antenna comprises;

a first element responsive to a first frequency, and

a second element responsive to a second frequency.

22. The RF tag of claim 21, further comprising

a conversion circuit coupled between the first antenna element and the second antenna element, whereby;

the conversion circuit converts the second frequency to the first frequency.

23. An apparatus for printing and programming intelligent labels, comprising;

a print engine having a media path, and

an RF tag programmer mounted thereto,

whereby media comprising intelligent labels may be programmed and printed with indicia, and wherein;

the RF tag programmer is capable of transmitting RF energy at a plurality of frequencies.

24. The apparatus of claim 23, wherein;

the print engine is a thermal transfer print engine.

25. The apparatus of claim 23, wherein;

the print engine is a flexographic printing press.

26. The apparatus of claim 23, further comprising;

a media supply for holding a length of intelligent labels prior to printing.

27. A method for writing data to RF tags, comprising;
programming one or more of a first set of RF tags in a programmer,
removing a media supply of the first set of RF tags from the programmer,
installing a second set of RF tags in the programmer, and
programming at least one of the second set of RF tags, wherein;
the first set and second set of RF tags use different communication interfaces.

28. The method of claim 27, wherein;
the first set of RF tags uses a first communication protocol, and
the second set of RF tags uses a second communication protocol.

29. The method of claim 27, wherein;
the first set of RF tags uses a first communication frequency, and
the second set of RF tags uses a second communication frequency.

30. The method of claim 27, further comprising;
printing indicia on a surface of said first one or more RF tags with a print engine.

31. The method of claim 30, wherein;
the print engine comprises a thermal print engine.

32. The method of claim 30, wherein;
the print engine comprises a flexographic printing press.

33. The method of claim 27, wherein;

switching the programmer from the first communication interface to the second communication interface happens substantially without overt user intervention.